

**AMENDMENTS TO THE CLAIMS:**

Please amend the claims as set out below:

1.-63. (Cancelled)

64. **(Currently Amended)** A process for producing a ~~long-term~~ culture of ~~immature~~ human ~~or mouse~~ dendritic cells, comprising:

(i) culturing ~~an~~ human embryonic stem ~~cell~~ cells in the presence of ~~a~~ composition comprising IL-3, wherein said culturing produces human dendritic cells. ~~a cytokine, which bring about differentiation of said embryonic stem cell into an immature dendritic cell; and~~

(ii) ~~recovering said immature dendritic cell from said culture,~~

65.-68. (Cancelled)

69. **(Currently Amended)** The process according to claim 64 ~~claim 68~~, wherein said composition further comprises GM-CSF.

70. **(Currently Amended)** The process according to claim 64, wherein the process comprises culturing the human embryonic stem cells to form embryoid bodies ~~said embryonic stem cell in (i) is in the form of embryoid bodies.~~

71. **(Currently Amended)** The process according to claim 64, wherein said human embryonic stem cells are ~~cell (ES)~~ is genetically modified.

72. **(Currently Amended)** The process of ~~claim 71~~ claim 64, wherein the human dendritic cells express ~~cell expresses~~ one or more heterologous gene(s).

73. (Canceled)

74. **(Currently Amended)** The process of ~~claim 73~~ claim 72, wherein the heterologous gene(s) encodes a cell surface protein ~~is a cell surface receptor.~~

75. (Currently Amended) The process of ~~claim 74~~ claim 72, wherein the heterologous gene(s) encodes ~~protein is~~ Fas-ligand.

76. (Canceled)

77. (Currently Amended) The process of ~~claim 73~~ claim 72, wherein the heterologous gene(s) encodes an antigen ~~protein is an antigen target for the immune system, such as an autoantigen, a tumour antigen, or a foreign antigen.~~

78. (Currently Amended) The process of claim 64, wherein the human dendritic cells co-express ~~cell co-expresses~~ two or more heterologous genes.

79. (Canceled)

80. (Currently Amended) The process of ~~claim 79~~ claim 72, wherein the heterologous gene(s) ~~gene~~ is an anti-apoptotic gene.

81. (Currently Amended) The process of claim 72 ~~78 or 79~~, wherein the heterologous gene(s) ~~gene~~ encodes FLIP or bcl-2.

82. (Currently Amended) The process of claim 64, wherein one or more endogenous gene(s) ~~have~~ has been inactivated in the human embryonic stem cells.

83. (Currently Amended) The process of claim 82, wherein the inactivated endogenous gene(s) ~~are~~ is B7-1, IL-12, p35 subunit of IL-12 or p40 subunit of IL-12.

84. (Currently Amended) The process of claim 71, wherein said human embryonic stem cells ~~are~~ cell is transfected with a gene, which gene is expressed in the human dendritic cells ~~cell~~.

85. (Canceled)

86. **(Currently Amended)** The process of claim 84, ~~any one of claims 84, 85 or 111~~, wherein the gene is a reporter gene which expresses a detectable ~~product~~ **protein** in the human dendritic cells ~~cell~~.

87. **(Currently Amended)** The process of claim 86, wherein the detectable protein is gene encodes a fluorescent **protein** ~~product~~.

88. **(Currently Amended)** The process of claim 87, wherein the ~~gene is the GFP gene~~ **fluorescent protein is a green fluorescent protein (GFP)**.

89. **(Currently Amended)** The process of claim 71, wherein the human embryonic stem cells ~~are ES-cell~~ is genetically modified so as to inactivate a copy of a gene.

90. **(Currently Amended)** The process of claim 112 ~~claim 64~~, wherein the recovered ~~immature~~ human dendritic cells are ~~cell~~ is substantially pure.

91. - 109. (Canceled)

110. **(Currently Amended)** The process according to claim 70 ~~claim 64~~, wherein said composition further comprises GM-CSF.

111. **(Currently Amended)** The process of claim 84, wherein the gene is under the control of a promoter which **is preferentially active in dendritic cells** ~~upregulates gene expression in the human on maturation of the dendritic cell~~.

112. **(New)** The process according to claim 64, wherein the process further comprises recovering said human dendritic cells from said culture.

113. **(New)** The process of claim 77, wherein the antigen is an autoantigen, a tumour antigen, or a foreign antigen.

114. **(New)** The process of claim 77, wherein the antigen is a tumour antigen.

115. **(New)** A process for producing a culture of mouse dendritic cells, comprising:  
culturing mouse embryonic stem cells in the presence of a composition comprising IL-3, wherein  
said culturing produces mouse dendritic cells.

116. **(New)** The process according to claim 115, wherein the process further comprises  
recovering said mouse dendritic cells from said culture.

117. **(New)** The process according to claim 115, wherein the composition further comprises GM-  
CSF.

118. **(New)** The process according to claim 115, wherein the process comprises culturing the  
mouse embryonic stem cells to form embryoid bodies.

119. **(New)** The process according to claim 115, wherein said mouse embryonic stem cells are  
genetically modified.

120. **(New)** The process of claim 115, wherein the mouse dendritic cells express one or more  
heterologous gene(s).

121. **(New)** The process of claim 120, wherein the heterologous gene(s) encodes a cell surface  
protein.

122. **(New)** The process of claim 120, wherein the heterologous gene(s) encodes an antigen.

123. **(New)** The process of claim 115, wherein the mouse dendritic cells co-express two or more  
heterologous genes.

124. **(New)** The process of claim 115, wherein one or more endogenous gene(s) has been inactivated in the mouse embryonic stem cells.

125. **(New)** The process of claim 119, wherein said mouse embryonic stem cells are transfected with a gene, which gene is expressed in the mouse dendritic cells.

126. **(New)** The process of claim 125, wherein the gene is under the control of a promoter which is preferentially active in dendritic cells.

127. **(New)** The process of claim 125, wherein the gene is a reporter gene which expresses a detectable gene product in the mouse dendritic cells.

128. **(New)** The process of claim 127, wherein the detectable gene product is a fluorescent protein.

129. **(New)** The process of claim 128, wherein the fluorescent protein is a green fluorescent protein (GFP).

130. **(New)** The process of claim 119, wherein the mouse embryonic stem cells are genetically modified so as to inactivate a copy of a gene.

131. **(New)** The process of claim 115, wherein the recovered dendritic cells are substantially pure.

132. **(New)** The process of claim 115, wherein the mouse embryonic stem cells are derived from CBA/Ca or C57Bl/6.

133. **(New)** The process of claim 115, wherein the mouse embryonic stem cells are from the ESF116 cell line.

134. **(New)** The process of claim 70, wherein the composition further comprises GM-CSF.

135. **(New)** The process of claim 110, wherein the method further comprises recovering said human dendritic cells from said culture.

136. **(New)** A process for producing a culture of human dendritic cells, comprising:  
culturing embryoid bodies formed from human embryonic stem cells in the presence of a composition comprising IL-3, wherein said culturing produces human dendritic cells.

137. **(New)** The process of claim 136, wherein the embryoid bodies are adhered to a surface.

138. **(New)** The process of claim 136, wherein the composition further comprises GM-CSF.